



Response Action Contract  
for Remedial, Enforcement Oversight, and Non-Time  
Critical Removal Activities at Sites of Release or  
Threatened Release of Hazardous Substances  
in EPA Region VIII

ADMINISTRATIVE  
RECORD

U.S. EPA Contract No. 68-W5-0022

Remedial Investigation and Removal Action Work Plan for  
Riverside Park - Final RI Results Addendum  
Libby Asbestos Site, Operable Unit 4

September 26, 2003

Work Assignment No.: 137-RIRI-08BC  
Document Control No.: 3282-137-PP-SAMP-18755

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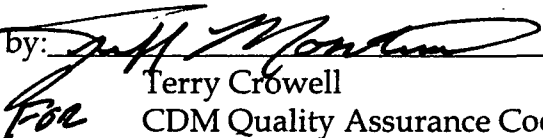
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Work Assignment No.: 137-RIRI-08BC

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# Acronyms

bgs	below ground surface
CDM	CDM Federal Programs Corporation
DQO	data quality objective
EPA	U.S. Environmental Protection Agency
ES	embankment sample
FSDS	field sample data sheet
H&S	health and safety
IFF	information field form
LA	Libby amphibole
PCM	phase contrast microscopy
PS	park sample
QC	quality control
Reservoirs	Reservoirs Environmental Services Inc.
RI	remedial investigation
RS	riverbank sample
TEM	transmission electron microscopy
TP	test pit
TS	Thomas Street sample
Volpe	U.S. Department of Transportation Volpe Center
<	less than
μm	micron

# Section 1

## Introduction

A remedial investigation (RI) was conducted at Riverside Park between September 9 and 15, 2003 in accordance with the Remedial Investigation and Removal Action Work Plan for Riverside Park (CDM Federal Programs Corporation [CDM] 2003a). The purpose of this addendum is to present the RI activities conducted and analytical results, and based on that information, identify boundaries for removal.

## Section 2

# Remedial Investigation

In accordance with the Remedial Investigation and Removal Action Work Plan for Riverside Park (CDM 2003a), CDM conducted pre-removal characterization activities at Riverside Park. These activities included verbal interviews with city park personnel, visual inspection of the site, and collection of both surface and subsurface soil samples. These activities were completed between September 9 and 15, 2003.

### 2.1 Verbal Interview

CDM met with Dan Thede, director of public services for the City of Libby, on September 15, 2003 to discuss historical use of Riverside Park. An information field form (IFF) was completed during the interview and can be found in Appendix A.

### 2.2 Visual Inspection

CDM conducted an initial inspection of the site on May 22, 2003. Details regarding that inspection can be found in the remedial investigation and removal action work plan (CDM 2003a). Additional inspections were completed between September 9 and 13, 2003. Vermiculite was observed at several locations within the park but was generally concentrated in areas on the river side of the former access road that ran through the property, including the entire length of the riverbank. Trace to moderate amounts of vermiculite were also observed on the southwest side of the embankment (export plant side) of City Service Road. Lastly, an isolated area of vermiculite was located at the bottom of the embankment of West Thomas Street on the east side of Highway 37. All locations of vermiculite found during visual inspections are shown on Figure 2-1. Logbook pages from the work at Riverside Park can be found in Appendix B.

### 2.3 Soil Sampling

Soil sampling activities occurred between September 9 and 13, 2003 and included both surface soil samples and subsurface test pit samples. All soil samples were collected in accordance with the remedial investigation and removal action work plan (CDM 2003a). Logbook pages can be found in Appendix B and field sample data sheets (FSDSs) can be found in Appendix C. Details regarding this sampling is discussed below.

#### 2.3.1 Surface Soil Samples

##### Park Samples (PS)

Seven surface soil samples were collected within the park (Figure 2-2). All proposed sampling locations were sampled (i.e., no locations needed to be either deleted or moved due to visible vermiculite) and no additional samples were collected. Visible

vermiculite was observed near sample locations (CS-16687 and CS-16688); however, no vermiculite was seen in either sample collected at those locations.

#### Riverbank Samples (RS)

Three surface soil samples were collected along the riverbank on the north side of the park (Figure 2-2). Information regarding the remaining four proposed riverbank samples (RS-1, RS-3, RS-4, and RS-7) is discussed in Section 3.1.

#### Embankment Samples

Nine surface soil samples were collected on the north and five surface samples were collected on the south side of the embankment of City Service Road between Highway 37 and the entrance to the park (Figure 2-2). Embankment samples were collected at 50-foot intervals as described in the remedial investigation and removal action work plan (CDM 2003a). Figure 2-1 of the work plan showed eight sample locations; however, sampling at 50-foot intervals resulted in 14 sample locations. Trace to moderate amounts of vermiculite were observed on the southwest side of the embankment (former export plant side); conversely, no vermiculite was seen on the northeast side of the embankment (Riverside Park side).

#### Thomas Street Samples (TS)

Thomas Street samples have not been collected thus far. The owner has been contacted but has not responded to grant access to the property.

### **2.3.2 Subsurface Soil Samples**

#### Test Pit Samples

The 11 proposed test pits were excavated and sampled. All proposed test pit locations were excavated (i.e., no locations needed to be either deleted or moved due to visible vermiculite). The final work plan stipulated that six of the test pits would have a second test pit excavated offset either 50 feet toward the former export plant or 30 feet toward the river, depending on whether or not visible vermiculite was encountered in the six test pits. Four of these secondary, offset test pits were excavated. The two remaining secondary test pit locations (TP-2a and TP-5a) were not excavated as proposed. Information about these two sampling locations can be found in Section 3.1.

If visible vermiculite was observed in the test pits, the sampling team noted the observation in the field logbook. Observations regarding visible vermiculite seen in or around test pit excavation locations are presented in Table 2-1. Test pits not included in the table did not have visible vermiculite observed in them.

**Table 2-1. Test Pit Observation Details**

Sample Location	Details
TP-3	<ul style="list-style-type: none"> <li>■ Significant vermiculite was observed over the entire boat ramp in the vicinity of this sample location and the parking area adjacent to the northern picnic area.</li> <li>■ Fine to coarse sandy gravel (road base) with significant vermiculite at 0" to 5" interval.</li> <li>■ Significant raw vermiculite at 5" to 8" interval.</li> <li>■ No vermiculite observed below 8".</li> <li>■ No vermiculite observed in sample.</li> </ul>
TP-5	<ul style="list-style-type: none"> <li>■ Fine to medium gravelly sand with significant vermiculite at 0" to 2" interval.</li> <li>■ Surface silty sand with significant vermiculite. At 2" to 6" interval.</li> </ul>
TP-6	<ul style="list-style-type: none"> <li>■ A few flakes observed at the 18" interval.</li> <li>■ Test pit offset 30' toward river</li> <li>■ Trace amounts of vermiculite observed at 8" below ground surface (bgs).</li> </ul>
TP-7	<ul style="list-style-type: none"> <li>■ Asphalt observed at 0" to 2" interval.</li> <li>■ Fine to coarse sandy gravel with significant vermiculite at 2" to 4" interval.</li> <li>■ Geotech fabric observed at 4" bgs.</li> <li>■ Fine to coarse sand with fine to coarse gravel with significant vermiculite at 4" to 8" interval.</li> </ul>
TP-8	<ul style="list-style-type: none"> <li>■ Significant amounts of vermiculite observed at surface.</li> <li>■ No vermiculite observed bgs.</li> </ul>
TP-9	<ul style="list-style-type: none"> <li>■ Significant amounts of vermiculite observed at 0" to 6" interval.</li> </ul>
TP-11	<ul style="list-style-type: none"> <li>■ Trace amounts of vermiculite observed at surface.</li> <li>■ No vermiculite observed bgs.</li> </ul>

# Color Map(s)

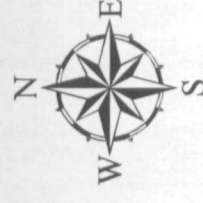
The following pages  
contain color that does  
not appear in the  
scanned images.

To view the actual images, please  
contact the Superfund Records  
Center at (303) 312-6473.

Figure 2-1  
Visible Vermiculite  
Location Map  
Riverside Park  
Libby, Montana

**Legend**

▲ Location of Visible  
Vermiculite



Feet  
0 50 100 200

**CDM**

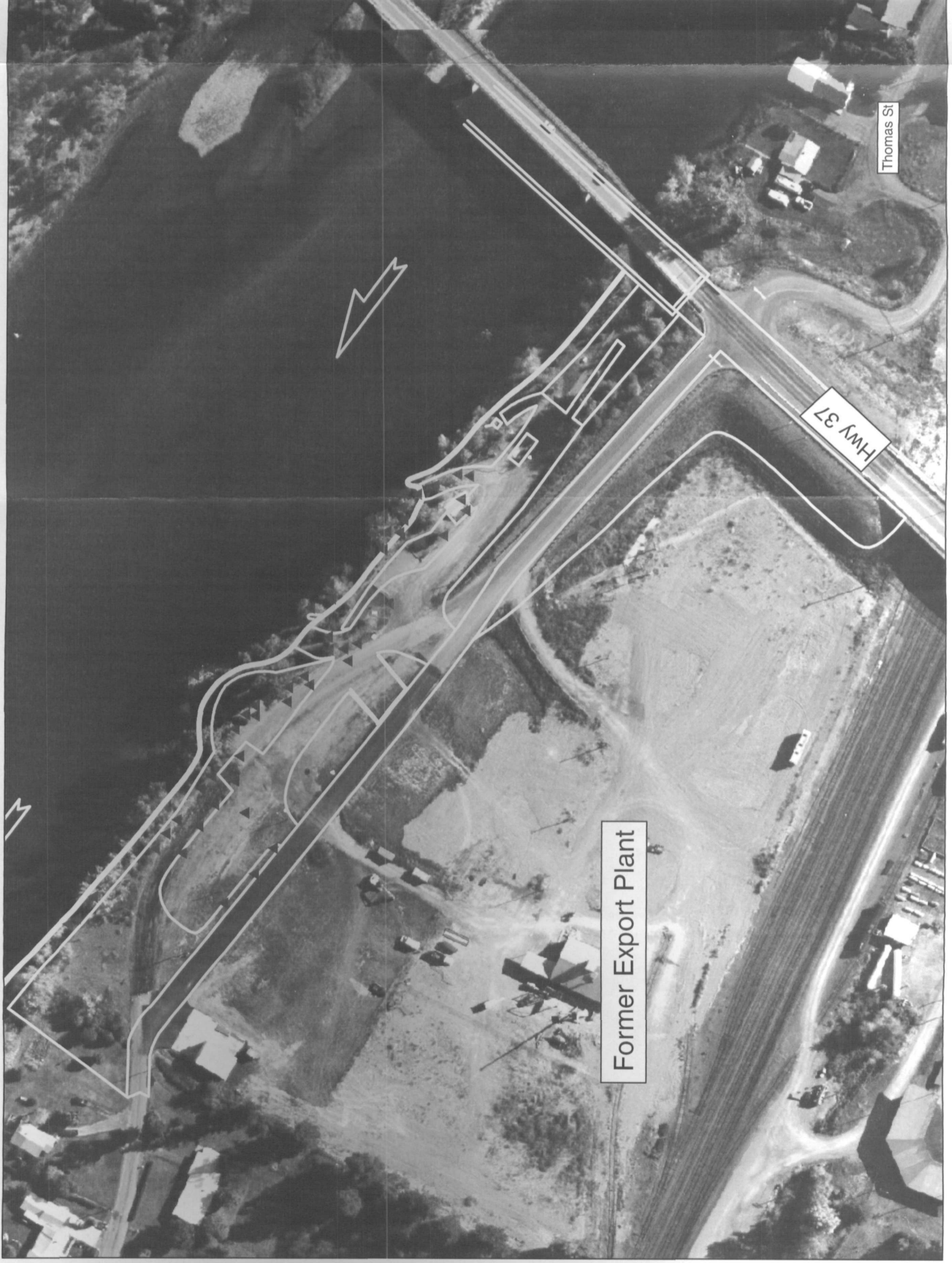
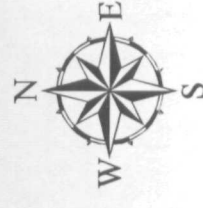


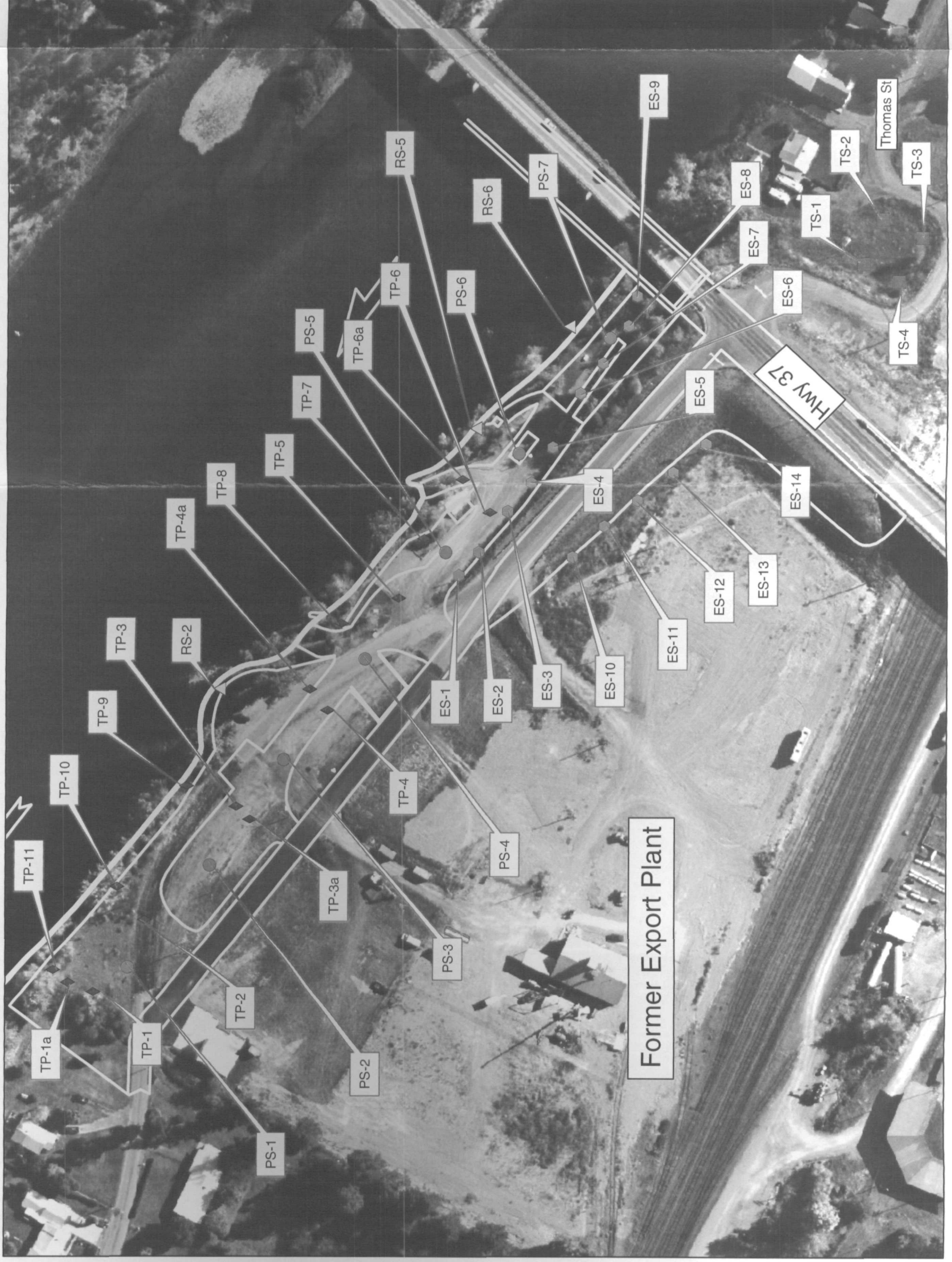
Figure 2-2  
Sample Location Map  
Riverside Park  
Libby, Montana

### Legend

△	Riverbank Sample
●	Park Sample
◆	Test Pit Sample
⬡	Embankment Sample
■	Thomas St Sample



**CDM**



## Section 3

# Quality Assurance

Quality assurance for the remedial investigation sampling at Riverside Park is addressed in the following four subsections: deviations from the sampling and analysis plan, usability of the data, achievement of data quality objectives (DQOs), and summary of quality control (QC) activities.

### 3.1 Deviations from the Sampling and Analysis Plan

#### 3.1.1 Surface Soil Samples

##### Park Samples

- Park Sample 4 (PS-4) - vermiculite was observed at the 0 to 6 inch interval in the northern subsample at this sampling location. Therefore, only a 4-point composite, excluding the northern subsample, was submitted for this sample.

##### Riverbank Samples

- Riverbank Sample 1 (RS-1) - this sample was not collected due to the presence of visible vermiculite at this location.
- Riverbank Sample 3 (RS-3) - this sample was not collected due to the presence of visible vermiculite at this location.
- Riverbank Sample 4 (RS-4) - this sample was not collected due to the presence of visible vermiculite at this location.
- Riverbank Sample 7 (RS-7) - this sample was not collected due to the presence of visible vermiculite at this location.

#### 3.1.2 Subsurface Soil Samples

##### Test Pit Samples

- Test Pit 2 (TP-2) - the offset test pit (TP-2a) was not excavated at this location due to its proximity to test pit 10.
- Test Pit 3 (TP-3) - the offset test pit (TP-3a) was excavated at a 30-foot interval (toward the road) versus the required 50-foot interval because the marking for a fiber optic line crossed the location of the 50 foot offset interval.

- Test Pit 5 (TP-5) – the offset test pit (TP-5a) was not excavated at this location due to its proposed location (30 feet closer to the river) being in the Kootenai River.

### **3.2 Usability of the Data**

The remedial investigation data were neither evaluated nor validated. Therefore, it is assumed that the raw data are usable for their intended purpose, which is to determine removal objectives for the site, delineate excavation limits of contaminated soils, and develop guidelines for subsequent restoration activities.

### **3.3 Achievement of Data Quality Objectives**

Data quality objectives were met and will be discussed in detail in the RI report.

### **3.4 Summary of Quality Control Activities**

Two types of QC samples were collected during this investigation, field duplicate samples and field equipment blanks. Field duplicate samples were collected at a rate of 1 per 20, and field equipment blanks were collected at a rate of 1 per day. Both types of QC samples were collected in accordance with the Remedial Investigation and Removal Action Work Plan for Riverside Park (CDM 2003a).

All additional QC activities for the Riverside park investigation were completed in accordance with the CSS SAP Revision 1 (CDM 2003b).

## Section 4 Results

A sample collection key is presented in Table 4-1. A summary of all sample results is presented in Table 4-2. Detailed bench sheets are included as Appendix D.

**Table 4-1. Sample Collection Key**

	Sample Location	Index Id	Sample Date	No. of Subsamples	Sample Interval
Riverbank Samples	RS-2	CS-16694	9/9/03	5	0-6 inches
	RS-5	CS-16695	9/9/03	5	0-6 inches
	RS-6	CS-16696	9/9/03	5	0-6 inches
Park Samples	PS-1	CS-16686	9/9/03	5	0-6 inches
	PS-2	CS-16687	9/9/03	5	0-6 inches
	PS-3	CS-16688	9/9/03	5	0-6 inches
	PS-4	CS-16689	9/9/03	4	0-6 inches
	PS-5	CS-16691	9/9/03	5	0-6 inches
	PS-6	CS-16692	9/9/03	5	0-6 inches
	PS-7	CS-16693	9/9/03	5	0-6 inches
Test Pit Samples	TP-1	CS-16698	9/10/03	Grab	36-38 inches
	TP-1a	CS-16842	9/12/03	Grab	36-38 inches
	TP-2	CS-16699	9/10/03	Grab	36-39 inches
	TP-3	CS-16700	9/10/03	Grab	14-16 inches
	TP-3a	CS-16821	9/10/03	Grab	36-38 inches
	TP-4	CS-16835	9/12/03	Grab	36-38 inches
	TP-4a	CS-16836	9/12/03	Grab	36-38 inches
	TP-5	CS-16837	9/12/03	Grab	12-18 inches
	TP-6	CS-16839	9/12/03	Grab	36-38 inches
	TP-6a	CS-16846	9/12/03	Grab	36-38 inches
	TP-7	CS-16845	9/12/03	Grab	14-16 inches
	TP-8	CS-16838	9/12/03	Grab	36-38 inches
	TP-9	CS-16844	9/12/03	Grab	12-14 inches
	TP-10	CS-16843	9/12/03	Grab	36-38 inches
	TP-11	CS-16841	9/12/03	Grab	36-38 inches

Table 4-1. Sample Collection Key (continued)

	Sample Location	Index Id	Sample Date	No. of Subsamples	Sample Interval
Embankment Samples	ES-1	CS-16848	9/13/03	5	0-6 inches
	ES-2	CS-16849	9/13/03	5	0-6 inches
	ES-3	CS-16850	9/13/03	5	0-6 inches
	ES-4	CS-16851	9/13/03	5	0-6 inches
	ES-5	CS-16853	9/13/03	5	0-6 inches
	ES-6	CS-16854	9/13/03	5	0-6 inches
	ES-7	CS-16855	9/13/03	5	0-6 inches
	ES-8	CS-16856	9/13/03	5	0-6 inches
	ES-9	CS-16857	9/13/03	5	0-6 inches
	ES-10	CS-16858	9/13/03	5	0-6 inches
	ES-11	CS-16859	9/13/03	5	0-6 inches
	ES-12	CS-16860	9/13/03	5	0-6 inches
	ES-13	CS-16861	9/13/03	5	0-6 inches
	ES-14	CS-16862	9/13/03	5	0-6 inches

Table 4-2. Sample Results

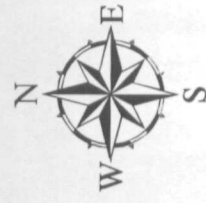
	Sample Location	Index Id	Results
Riverbank Samples	RS-2	CS-16694	ND
	RS-5	CS-16695	ND
	RS-6	CS-16696	ND
Park Samples	PS-1	CS-16686	TR
	PS-2	CS-16687	ND
	PS-3	CS-16688	ND
	PS-4	CS-16689	ND
	PS-5	CS-16691	TR
	PS-6	CS-16692	ND
	PS-7	CS-16693	ND
Test Pit Samples	TP-1	CS-16698	ND
	TP-1a	CS-16842	ND
	TP-2	CS-16699	ND
	TP-3	CS-16700	ND
	TP-3a	CS-16821	ND
	TP-4	CS-16835	ND
	TP-4a	CS-16836	ND
	TP-5	CS-16837	ND
	TP-6	CS-16839	TR
	TP-6a	CS-16846	ND
	TP-7	CS-16845	ND
	TP-8	CS-16838	ND
	TP-9	CS-16844	ND
	TP-10	CS-16843	ND
	TP-11	CS-16841	ND
Embankment Samples	ES-1	CS-16848	TR
	ES-2	CS-16849	ND
	ES-3	CS-16850	TR
	ES-4	CS-16851	ND
	ES-5	CS-16853	ND
	ES-6	CS-16854	ND
	ES-7	CS-16855	TR
	ES-8	CS-16856	TR
	ES-9	CS-16857	TR
	ES-10	CS-16858	<1%
	ES-11	CS-16859	TR
	ES-12	CS-16860	TR
	ES-13	CS-16861	TR
	ES-14	CS-16862	TR

ND – non detect TR – trace <1% - less than 1% LA  
Analytical Method - SRC-Libby-03-Rev0, visual estimation  
Laboratory – Reservoirs Environmental Services, Inc.

Figure 4-1  
Surface Soil Sample Results  
Riverside Park  
Libby, Montana

### Legend

△	Riverbank Sample
●	Park Sample
◆	Embankment Sample



**CDM**

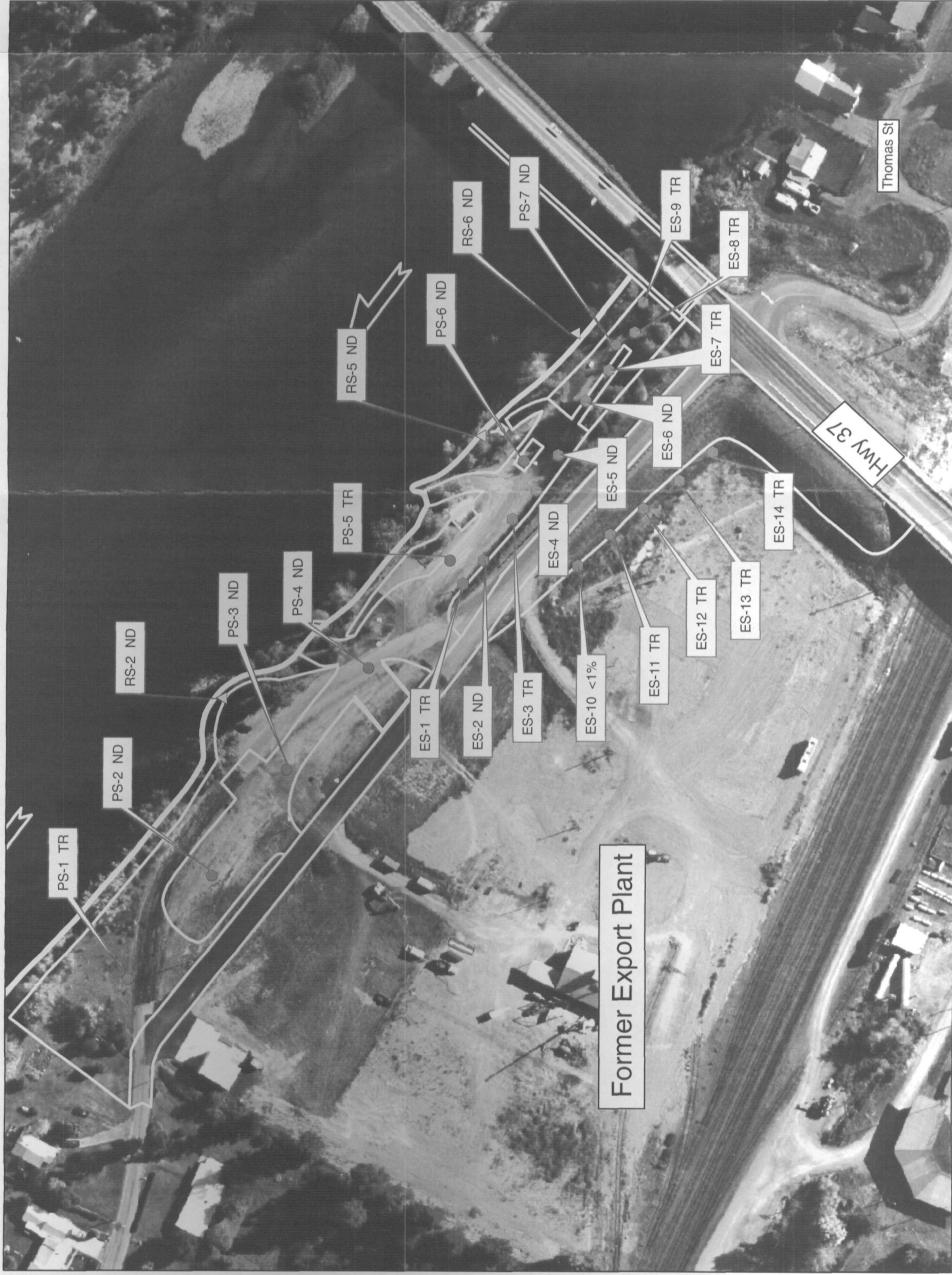
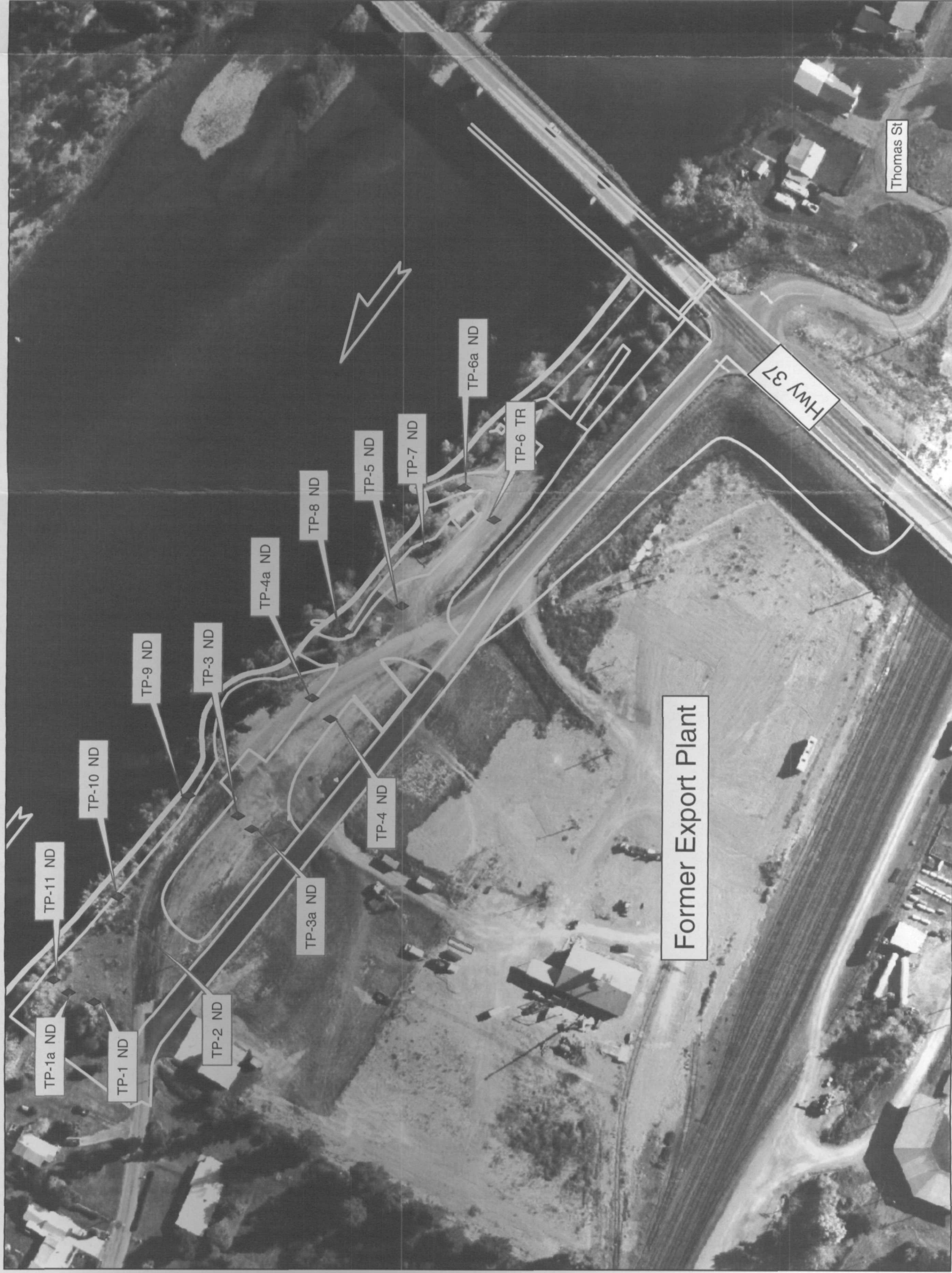


Figure 4-2  
Sub-Surface Soil Sample Results  
Riverside Park  
Libby, Montana



### Legend

◆ Test Pit Sample



Feet  
0 50 100 200

**CDM**

## Section 5

# Findings and Removal Action

A discussion of the findings of the remedial investigation at Riverside Park is presented in Section 5.1, and the resulting excavation limits is presented in Section 5.2. Additional details concerning the approach to restoring the riverbank following excavation of contaminated soils is provided in Section 5.3.

### 5.1 Findings

The visual inspection of the site indicated that visible vermiculite is pervasive at the surface on the river side of the former access road that ran through the property, including the entire length of the riverbank. It was also identified at other locations in the park and on the southwest side of the embankment of City Service Road immediately west of Highway 37 (see Figure 2-1).

Surface samples, generally located in areas without visible vermiculite, identified areas with trace to less than ( $<$ ) 1 percent Libby amphibole (LA) asbestos in several locations, including the northwest end of the site, the southeast end of the site, and along the southwest side of the embankment of City Service Road.

Visual inspection of the test pits excavated at the site in areas of surficial visible vermiculite determined that visible vermiculite was located at depths up to 8 inches bgs. Sampling of the test pit soils below the depths of visible vermiculite and in areas without visible vermiculite found no LA asbestos with the exception of Test Pit 6 where a trace of LA asbestos was found.

Based on the visual inspection, and the surface and subsurface sampling discussed above, visible vermiculite and LA asbestos are generally located in the top 6 to 8 inches of soil throughout the Riverside Park site.

### 5.2 Excavation Limits

Based on the findings of the remedial investigation discussed above, site soils will be excavated in accordance with the final work plan for the site. In general, soils will be excavated to a depth of 12 inches throughout the entire Riverside Park site, except the riverbank and the embankment on the northeast side (the river side) of City Service Road. Soil will be excavated at these two locations to a depth of 6 inches. It should be noted that excavation of the embankment on the southwest side of City Service Road (the export plant side) will be conducted at a later date, in conjunction with other cleanup in the area.

Following the initial excavation cuts, a CDM oversight representative will inspect the excavation to determine if visible vermiculite is still present. If it is, the cleanup construction contractor will be directed to excavate an additional 6 inches of soil until visible vermiculite is no longer observed or until the maximum excavation depth is

reached. Maximum excavation depths will be 3 feet across the site, except for the riverbank and the embankment on the northeast side of City Service Road where it will be 12 inches.

Once excavation is deemed complete by the CDM representative, confirmation sampling will be conducted in accordance with the final work plan, unless significant quantities of vermiculite are still visible at the maximum excavation depths. If this occurs, it will be noted in the field logbook maintained by the CDM oversight representative, and the cleanup/construction contractor will be directed to place a geotextile fabric over the area as marker for future excavation work at the site.

During excavation of the riverbank, excavation will be conducted down the slope to the water's edge, or to the bottom of the slope. Excavation will not be conducted in the water or on the relatively flat flood plain areas that exist in some locations above the current elevation of the water. Also, the excavation efforts will include flattening the slope at the top of the bank where feasible, as directed by the CDM oversight representative.

A preliminary estimate of the amount of soil requiring removal from the site is 6,100 cubic yards based on the estimated area of the site and the planned depths of excavation. This estimate of excavation quantities may increase based on visual observations and sampling during cleanup/construction.

### 5.3 Site Restoration

The final work plan includes a discussion of the planned restoration of the site. Based on the discussions with the city and observations of the conditions of the riverbank during and following the remedial investigation work, additional details of the riverbank restoration were developed. These details follow.

In general, restoration of the riverbank will include the placement of 6 to 12 inches of topsoil, depending on the amount of soil excavated, followed by dry-seeding of a government-approved seed mix and the placement of an erosion control mat on top of the topsoil. The erosion control mat will not include nylon webbing.

In the area just downstream of the new boat ramp, the city has placed riprap along the toe of the bank. This riprap will be left in place during excavation, and when topsoil is placed on the riverbank, it will be placed within the interstitial spaces of the riprap. This topsoil will be seeded along with the bank above the riprap but will not be covered with the erosion control mat.

About three-quarters of the way from the new boat ramp to the existing boat ramp, the city has planned to install riprap into the river to slow the velocity of the water in the area of the new boat ramp. The city has already obtained the riprap for this purpose. The cleanup/construction contractor will place this riprap during restoration activities. The configuration of the riprap placed in the water will be coordinated with the city.

## Section 6

### References

CDM 2003a. Final Remedial Investigation and Removal Action Work Plan for Riverside Park. September.

CDM 2003b. Final Sampling and Analysis Plan, Remedial Investigation, Contaminant Screening Study, Revision 1. May.

# Appendix A

## Riverside Park Information Field Form

**CDM**

9/15/03

Soil samples collected (Date: \_\_\_\_\_)

**LIBBY ASBESTOS PROJECT**  
**Contaminant Screening Study**  
**Primary Structure and Property Assessment Information Field Form (Primary IFF)**

Field Logbook No.: 100275 Page No.: 60 Site Visit Date: 9/15/03  
 Address: RIVER SIDE PARK Structure Description: PARK  
 Occupant: N/A Phone Number: \_\_\_\_\_  
 Owner (if different than occupant): City of Libby Phone Number: 293-2731  
 Business Name: N/A  
 Sampling Team: Bob Hunt, Danny Zarkane, C.D.M.  
 Field Form Check Completed by (100% of forms): Dee Warden  
 Screening Field Check Completed by (2% of forms): \_\_\_\_\_

Data Item	Value	Notes
<b>HOUSE ATTRIBUTES</b>		
Property Description	Residential Industrial <u>Commercial</u>	
Surrounding Land Use	Residential Industrial <u>Commercial</u> School Mining _____ Other: _____	
Year of Construction	<u>N/A</u> Unknown	
Square Footage	<u>N/A</u>	
Construction Material	Wood frame Masonry/Stone <u>Other</u> <u>N/A</u>	
Number of Floors Above Ground	1 2 3 <u>Other</u> <u>N/A</u>	
Number of Rooms Per Floor Above Ground	1: _____ 2: _____ 3: _____ <u>Other</u> _____	
Basement	Yes No	
Heating Source	Wood/Coal Electric Propane/Gas <u>Other</u> <u>N/A</u>	
Heat Distribution	Forced air Radiant <u>Other</u> <u>N/A</u>	

Address: River Side PARKAD-000748  
BD#

Data Item	Value	Notes
<b>OCCUPANT INFORMATION</b>		
Was the residence/building remodeled?	Yes <u>No</u>	
	If yes, When (years): <2 2-5 >5 Where: Attic Living Areas Garage Basement Other: <u>N/A</u>	
Has resident/business purchased any Libby vermiculite materials from W.R. Grace in the past?	<u>Yes</u> No	
Has the property at this location been used for a for-profit enterprise of distributing, treating, storing, or disposing of Libby vermiculite?	<u>Yes</u> No	
<b>CONTAMINANT SCREENING STUDY ASSESSMENT</b>		
Occupant Information		<input checked="" type="checkbox"/> Verbal Interview Complete: <u>9/15/03</u>
Is there any knowledge of former miners, close relatives of miners, or any highly exposed persons living or visiting the property?	Yes <u>Unknown</u> No	If unknown, why?
Is the resident, past or present, diagnosed with an asbestos-related disease?	Yes <u>Unknown</u> No	If unknown, why?
Indoor Information		<input type="checkbox"/> Indoor Visual Inspection Complete: <u>N/A</u>
Does the interior have vermiculite attic insulation?	Yes <u>Unknown</u> No	If unknown, why? <u>PARK</u>
Did the interior ever have vermiculite attic insulation?	Yes <u>Unknown</u> No <u>NA</u>	If unknown, why?
NA applies if attic currently has VCI		
Are there vermiculite additives in any of the building materials?	Yes <u>Unknown</u> No	If unknown, why? Type and location of building material:

CSS Primary Structure IFF (continued)

Address: River Side Park

BB# AD-000748

Data Item	Value	Notes
Location of indoor vermiculite (circle all that apply)	Attic    Walls    Crawl Space    None Visual in Living Space: Basement, Ground Floor, Second Floor, Attached Garage Other: <u>N/A</u>	If in living space, provide specific location:
Outdoor Information		<input checked="" type="checkbox"/> Outdoor Visual Inspection Complete: <u>9/16/03</u>
Location of outdoor vermiculite (circle all that apply)	Driveway    Flowerbed    Garden    Yard Former Flowerbed    Former Garden Stockpile    None Other: <u>PARK</u>	
Overall Assessment Complete: <u>9/15/03</u>		<input checked="" type="checkbox"/> Reconnaissance (Verbal Interview, Indoor, Outdoor Inspection)
Are primary source materials present at the property?	<input checked="" type="radio"/> Yes    No	
Where are primary source materials located?	Inside <u>Outside</u> Both    NA	NA applies if no primary source materials are located at the property.
ADDITIONAL INFORMATION (Note any partial access or sample collection issues) <u>Area was used to store vermiculite during export plant operations.</u>		

CSS Primary Structure IFF (continued)

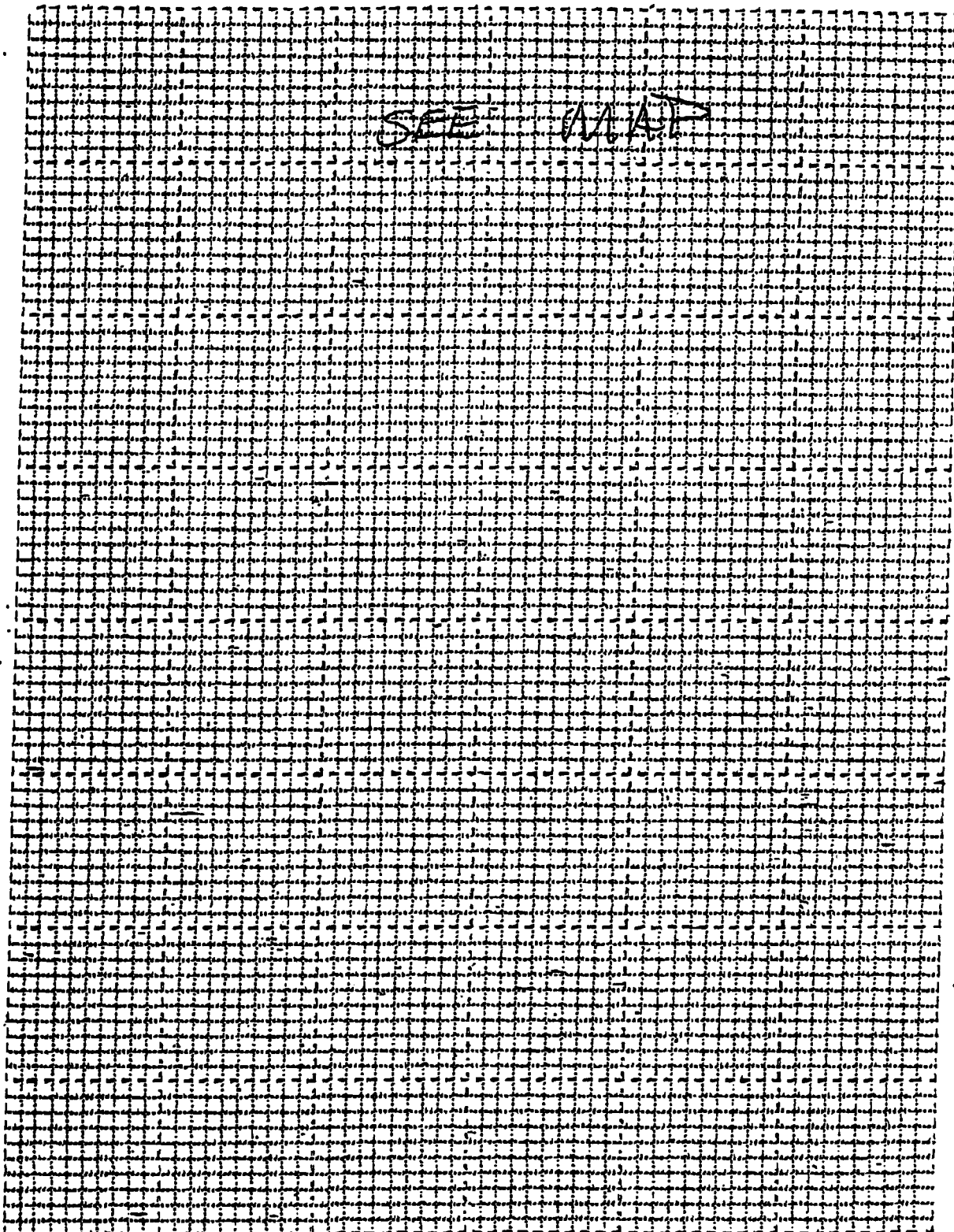
Address: RIVERSIDE PARK

AD  
ED# 000748

FIELD DIAGRAM OF PROPERTY

Identify important features (i.e. drainage, trees, gardens, structures, flowerbeds, utility poles, known underground utilities, suspected Libby amphibole source areas, sample locations, etc). Include north arrow.

NOT TO SCALE



# Appendix B

## Riverside Park Logbook Pages

**CDM**

RIVERSIDE PARK

Location

~~ON OFF~~ 9/9/03

Date

9/9/03 21

Project / Client

LIBBY ASBESTOS / U.S. EPA Region 8

FURROW AREA - 100' x 100' DIMENSIONS

USE GPS UNIT TO DIRECT ~~8/9/03~~  
US TO THE PROPER SAMPLING POINTS  
POINTS BY THE RIVER ARE UNDERCUT  
FABRIC. WILL NEED ER TO CUT THIS  
IN ORDER TO SAMPLER. 9/9/03

1130 - CHUCK FROM ER ARRIVES  
ONSITE - DEE WARREN ~~DEPARTS~~ 9/9/03  
DESCRIBES TO CHUCK WHAT NEEDS  
TO BE DONE. CHUCK CALLS EMPLOYEE  
SOMEONE FROM ER WILL MEET  
US @ RIVERSIDE PARK @ 1300 -  
ALSO ER PERSONNEL WILL BE ONSITE  
TOMORROW 9/10/03 FOR TEST PIT  
SAMPLING @ 0900. 9/9/03

1305 - ER ARRIVES ONSITE - SPEAK  
WITH MERRELL TAYLOR - WALK SITE &  
DESCRIBE WHAT WE NEED. MERRELL POINTS  
OUT AREAS OF L.V. LIES BY BOAT  
RAMP AND AREAS WHERE L.V. IS WASHING  
INTO THE RIVER BY THE RIVER BANK -  
ALSO EXPLAINS THAT THE AREA USED TO  
BE A STORAGE AREA FOR L.V. AND  
SOME AREAS L.V. MAY BE 14' DEEP

ROBERT HUNT - 9/9/03

TRACE L.V. OBSERVED E SURFACE IN AREA SS2 - NO L.V. OBSERVED 0-6" OR IN sample collected	SP-123158
CS-16688	SP-123158
FIELD DATA SHEET 005739	
TRACE L.V. OBSERVED IN VICINITY OF EASTERN SUB-SAMPLE IN AREA SS3	
CS-16689	SP-123159
FIELD DATA SHEET 005725	
CS-16690	SP-123159
FIELD DATA SHEET 005725	
L.V. OBSERVED 0-6" IN WESTERN SUB-SAMPLE OF AREA SS4 - NO SUB- SAMPLE WAS COLLECTED FROM THIS AREA - SAMPLE WAS A 4-PT COMPOSITE FROM THE SOUTHERN, EASTERN, WESTERN - CENTER SECTIONS OF THE REEF	
CS-16691	SP-123160
FIELD DATA SHEET 005725	

ROBERT HUNT 9/9/63

24

Location RIVERSIDE PARK Date 9/9/03Project / Client LIBBY ASBESTOS / U.S. EPA REGION 8RIVERSIDE PARK (City of LAH) AD-0007481602

SSC

CS- 16692

SP- 123161

FIELD DATA SHEET

005726

1609

SSC

CS- 16693

SP- 123162

FIELD DATA SHEET

005726

NO L.V. OBSERVED IN AREAS SSC

SSC OR SSC

on 9/9/03

1619

RS2

CS- 16694

SP- 123163

FIELD DATA SHEET

005726

1637

RSS

CS- 16695

SP- 123317

FIELD DATA SHEET

005727

1642

RS6

CS- 16696

SP- 123318

FIELD DATA SHEET

005727

NO L.V. OBSERVED IN AREAS

RS2, RS5, + RS6

on 9/9/03

1650 - CONTINUE MARKING

on 9/9/03

TEST PIT LOCATIONS

on 9/9/03

1715 - Depart RIVERSIDE PARK

FOR THE DAY.

on 9/9/03

- Robert Hunt 9/9/03

Location RIVERSIDE PARK Date 9/10/03 27  
Project / Client LIBBY ASBESTOS / U.S. EPA REGION 8

0950 - Dee Warner calls the  
City of Libby and talks to  
Dan Thede about utility clearance.  
No utility in area of test pits

0955 - BEGIN EXCAVATION OF TEST  
PIT #1 9/10/03

0-6" GRAYISH BLACK TOPSOIL  
6"-3'0" - BROWNISH GRAY SILT WITH LITTLE  
FINE SAND - LOOSE, MOIST 9/10/03

~~1015 - BEGIN EXCAVATION TEST PIT #2~~

SP-123319 1010 - COLLECT SAMPLE TP1 - NO  
LIV. OBSERVED - GRAB SAMPLE COLLECTED  
36-38" CS-16699 9/10/03

1015 - BEGIN EXCAVATION OF TEST PIT #2  
0-6" F-C SAND F-C GP GRAVEL (ROAD BASE)  
6-3'0" - F-M SANDY SILT, BROWN, LOOSE  
MOIST. 9/10/03

1035 - COLLECT SAMPLE 36-39"  
FROM TEST PIT #2 - NO LIV.  
CS-16699 SP-12320  
~~SP-12321~~ 9/10/03

FIELD DATA SHEET 005729 (98-99)

1045 - START TEST PIT #3 9/10/03

SP-123319 - ROBERT HUNT 9/10/03

TEST PIT #3 on 9/10/03  
 \* L.V. SCATTERS ACROSS SURFACE  
 SIGNIFICANT L.V. ENCOUNTERED 6"  
 BELOW GROUND SURFACE \* IN \* \*  
 0-5" f-c SANDY GRAVEL (ROAD BASE)  
 \* ~~substantially~~ WITH SIGNIFICANT L.V.  
 5-8" - RAW VARNICULITE  
 8"-3.0" - BROWN, f-m SAND, WITH  
 SILT, trace of coarse sand, loose, moist,  
 SAND IS SUBMITTED TO SUB ANGULAR  
 #100 - COLLECT SAMPLE FROM TEST  
 PIT #3 14-16" - NO L.V. IN SAMPLE  
 SP-123321  
 CS-16700 particle

FIELD DATA SHEET 005729 -  
 1115 START EXCAVATING TEST PIT 3A  
 TEST PIT 3A on 9/10/03  
 0-4" - f-c SANDY GRAVEL (ROAD BASE)  
 4"-3.0' - BROWNISH GRAY f-m SAND  
 SILT - TO SILT, f-m SAND, loose, moist,  
 SAND INCREASES WITH DEPTH on 9/10/03  
 1125 - COLLECT SAMPLE FROM T.P. 3A  
 CS-16821 SP-123322 F.D.S. #  
 005730  
 005730  
Robert Hunt - 9/10/03

WHILE DIGGING EXCAVATING TEST  
 PIT 3A on 9/10/03 CABLE LINE + CONDUIT  
 WERE NOTICED - LINE WAS NOT  
 DAMAGED - STOP EXCAVATING CALL  
 DAN TREDE FROM CITY OF LEBANON  
 AND ER CALLS CABLE COMPANY  
 TEST PIT 3A WAS PLACED TO  
 WEST OF TEST PIT 3 TO STAY  
 CLEAR OF ANY UTILITIES - A LINE  
 (unlabeled) SUPPOSEDLY RUNS ALONG THE  
 ROAD - TEST PIT 3A WAS PLACED  
 32' EAST OF THE ROAD. on 9/10/03  
 1135 - DAN TREDE FROM THE CITY OF  
 LEBANON APPROVES ON SITE on 9/10/03  
 1145 - ADDING CABLE ARRIVES ON SITE  
 TO INSPECT THE CABLE - WILL NEED  
 TO RE-Splice the cable on 9/10/03  
 1155 - MEASURE DISTANCE FROM CABLE  
 LINE + WHERE IT WAS MARKED -  
 CABLE IS 16.5' FROM WHERE IT  
 WAS SUPPOSED TO BE on 9/10/03  
 \* ADELPHI NOTIFIED US THAT IT  
 WAS NOT A FIBER OPTIC LINE - IT  
 WAS A CABLE LINE \* on 9/10/03  
 - Robert Hunt - 9/10/03

Location Riverside Park Date 9/16/03  
 Project / Client Lobby Address / U.S. ON Region

T1200 - According to Adelpia on  
 a utility locate was called in for  
 excavation work to begin on 9/15/03  
 B-Adelpia will try and locate the  
 line today but until then we  
 will not be able to continue work  
 SNOTE - earlier on there from the  
 City of Los Angeles that the line  
 was installed by a private contractor  
 S1215 - Depart Riverside Park 9/15/03  
 P1330 - Return to Riverside Park to  
 GPS points & soil sample locations.  
 1415 - Adelpia arrives onsite and  
 marks out cable line, and begins repair  
 of cable line.  
 1450 - While fixing line Adelpia notes  
 us that the black pvc which ~~is~~  
 crinkled - bent is power. A second gray  
 4" conduit which holds fiber optics is  
 cracked - may be damaged - needs to  
 have excavation dug out further to  
 examine the fiber optic conduit.  
 1455 - Dec location calls Merrell Taylor  
 of ER to have ER personnel operate  
 - Robert Hunt - 9/16/03

Location Riverside Park Date 9/16/03  
 Project / Client Lobby Address / U.S. EPA Region

The mini-excavator (Bob Cat 322)  
 and hand dug around the pipe.  
 1505 - ER arrives onsite & speaks  
 with Adelpia about what they need  
 done in order for them to fix  
 the conduit. on 9/16/03  
 1530 - Pipe uncovered - gray conduit  
 pipe is broken in two - cable  
 inside conduit is bent - does not  
 appear to be damaged. Upon further  
 inspection pipe broke & joint on 9/16/03  
 - Hack saw is used to remove broken  
 joint. Fiber optic cord is then  
 pulled out from manhole where  
 extra cable is rolled up. Gray conduit  
 pipe is then reattached and held together  
 with duck tape. Further work will  
 be completed on the pipe in the morning.  
 1610 - ER puts fencing around  
 excavation for the evening. on 9/16/03  
 1633 - ER finishes putting up fencing -  
 depart Riverside Park. on 9/16/03  
 1630 - Depart Riverside Park. on 9/16/03  
 - Robert Hunt - 9/16/03

Location RIVERSIDE PARK Date 9/12/03 43  
Project / Client LIBBY ASBESTOS / U.S. EPA REGION 8  
City of LIBBY ASBESTOS AD-000748

0755 - Arrive at RIVERSIDE PARK -  
SPEAK WITH Merrell TAYLOR FROM  
ER. All UTILITIES are MARKED, WITH  
The exception of City of Libby.  
ER MARKS UTILITIES for the City of  
Libby (water) - phone, power, &  
CABLE are MARKED. 9/12/03  
0825 - DEC WARREN ARRIVES ON SITE  
ER STILL LOCATING UTILITIES. Supposedly  
there is a source line that runs  
through the area but it can not  
be located because it is plastic.  
Merrell Taylor believes there are  
a couple of lines that run through  
the area. ER is using two  
METAL STICKS (witching). DEC WARREN  
LEAVES SITE TO GO SPEAK WITH  
Dan Thede from the City of Libby.  
TEST PIT #4 LOCATED location -  
SEEMS TO BE ON TOP OF WATER LINE -  
WITCHING METHOD PLACES LINE BY TEST  
PIT #4 - and traces it to WATER  
PLUG. - MOVE TEST PIT #4 10' to  
the WEST TO STAY CLEAR OF THE LINE.  
- ROBERT HUNT - 9/12/03 -

Location RIVERSIDE PARK Date 9/12/03  
 Project / Client LIBBY ASSOCIATES / U.S. EPA REGION 8  
CITY OF LIBBY AD-005748

AFTER SPEAKING WITH CITY OF LIBBY -  
 CITY claims that there are no water  
 lines running through the area - north  
 of paved road. There is an area where  
 a paved road once stood - there drainage  
 may be old. Dee Watson calls city  
 OF LIBBY to come down to Riverside  
 Park to confirm where and if  
 water lines exist in the area of  
 proposed excavations. on 9/12/03  
0909. City of LIBBY arrives and  
 THERE ARE NO LINES THAT RUN  
 THROUGH THE AREA OF OUR PROPOSED  
 EXCAVATIONS. John Kovach is regional  
 representative of city of Libby. in a letter  
0916. START EXCAVATING TEST PIT # 4  
BY 2/12/03

TEST PIT # 4  
 0'-6" - f-c SANDY GRAVEL (Rough Base)  
 6"-8.0" - f-c Gravelly SAND, with sub  
 SAND is sub rounded to sub angular.  
 WITH SUB ROUNDED TO SUB ANGULAR  
 CUBICLES, loose, moist. in 7/26/03  
0925. COLLECT SAMPLE FROM  
 TEST PIT # 4 on 9/12/03

Location RIVERSIDE PARK Date 9/12/03 45  
 Project / Client LIBBY ASSOCIATES / U.S. EPA REGION 8  
CITY OF LIBBY AD-005748

0925  
 TEST PIT # 4 CS-16835 SP-123336  
 (TP 4) FIELD DATA SHEET 005734  
 TEST PIT # 4A - IS MOVES 30'  
 EAST OF TEST PIT LOCATION # 4.  
0945. START EXCAVATING TEST  
 PIT # 5 - L.V. OBSERVED SUBS  
 TEST PIT # 5  
 L.V. @ SURFACE [L.V. - 0'-6"]  
 0-2" - Gravelly SAND, Gravelly BEAN  
 loose, moist - with ~~materially significant~~ L.V.  
 2"-6" Gravelly BEAN SILENT L.V.  
 SAND, loose, moist. SIGNIFICANT L.V.  
 6"-3.0' Gravelly BEAN SILENT L.V.  
 loose, moist. - NO L.V. in 7/26/03

1010  
 TEST PIT # 5 CS-16837 SP-123337  
 (TP 5) FIELD DATA SHEET 005734  
 TEST PIT # 5 COLLECTED 12-18"  
1020 - START EXCAVATING TEST PIT # 8  
 TEST PIT # 8  
 0-4" - f-m Gravelly SAND,  
 Gravelly BEAN, loose, moist on 9/12/03

Location RIVERSIDE PARK Date 9/12/03  
 Project / Client LIBBY ASBESTOS / U.S. EPA REGION 8  
 City of LIBBY AN-000748

4'-3.0' Grayish Brown, f-m sand,  
 trace - little silt, loose, moist.

(1035) collect test pit #8 sample 36"-38"  
 TEST PIT #8 SP-123339

FIELD DATA SHEET - 005735

1040 - section of container around  
 TEST PIT #6

1055 - section up container around  
 TEST PIT #4A

1100 - START EXCAVATING TEST PIT #4A  
 TEST PIT #4A

L.V. @ SURFACE

0-6" Dark Grayish Brown f-c  
 Gravely sand with sub rounded cobbles,  
 loose, moist.

6"-8.0' - Grayish Brown f-m silt  
 sand, dry, silt, sand increase,  
 with depth, loose, moist.

(1110) - collect test pit #4A sample 36"-38"  
 TEST PIT #4A SP-123337

FIELD DATA SHEET 005734

ROBERT HUNT-9/12/03

Location RIVERSIDE PARK Date 9/12/03  
 Project / Client LIBBY ASBESTOS / U.S. EPA REGION 8  
 City of LIBBY AD-000748

1120 - BEGIN EXCAVATION OF TEST  
 PIT #6

0-18" Gray sandy gravel, f-c  
 loose, moist. (Road base) 9/12/03

A couple of flakes of LIV observed  
 @ 18"

18"-36" - Grayish Brown, silt,  
 f-m sand, loose, moist. 9/12/03

collect test pit #6 sample 36"-38"  
 (1145)

TEST PIT #6 CS-16839 SP-123340

FIELD DATA SHEET 005735

collect duplicate sample from test pit #6  
 (1150)

TEST PIT #6 CS-16840 SP-123340

FIELD DATA SHEET 005735

1200 - Depart Riverside for lunch

1300 - Arrive back on site @ Riverside  
 ER BACK FILLING TEST PIT completed  
 this morning. 9/12/03

1410 - FINISHED BACKFILLING TEST PIT

1415 - BEGIN TEST PIT #11, cut  
 away plastic FIRST. 9/12/03

ROBERT HUNT-9/12/03

48 Location RIVERSIDE PARK Date 9/12/03  
 Project/Client L1834 A3 BERTS / U.S. EPA Region 8  
City of Liberty AD-000748

TEST PIT #11 on 9/12/03  
 TRACE L.V. e SURFACE  
 0-36" - Light Brownish Gray silty  
 f-m sand, with f-c gravel, +  
 sub angular to sub rounded cobbles  
 loose, moist. on 9/12/03

1430 - collect test pit at sample 36-38"

TEST PIT #11  
 TP4 CS-16841 SP-123341

FIELD DATA SHEET on 9/12/03

1435 - BEGIN TEST PIT #11 on 9/12/03

NO L.V. OBSERVED  
 0-36" - Light Brownish Gray  
 silty f-m sand, loose, moist

1435 - collect test pit 1A sample 36-38"

TEST PIT 1A  
 (TP1A) CS-16842 SP-123342

FIELD DATA SHEET on 9/12/03

1455 - BEGIN EXCAVATION OF TEST  
 PIT #10 - with not offset

TEST PIT #2 (TEST PIT #10  
 + offset of 2 would only be

49 Location RIVERSIDE PARK Date 9/12/03  
 Project/Client L1834 A3 BERTS / U.S. EPA Region 8  
City of Liberty AD-000748

TEST PIT #10 NO L.V. OBSERVED  
 0-12" LIGHT BROWNISH GRAY f-m  
 sand, with silt, with f-m gravel  
 + cobbles. (sub angular to sub rounded  
 12"-36" LIGHT BROWNISH GRAY  
 f-m sand, with silt, with  
 organic matter (roots - 0-36"), (moist)  
on 9/12/03

1500 collect test pit #10 sample 36-38"

TEST PIT 10  
 TP-10 CS-16843 SP-123343

FIELD DATA SHEET on 9/12/03

1510 - BEGIN EXCAVATION OF TEST PIT #9

TEST PIT #9 on 9/12/03

L.V. e SURFACE on 9/12/03

0-6" BROWNISH GRAY SILTY F-M  
 sand, with gravels, loose, moist

SIGNIFICANT L.V. 0-6" - almost all L.V.  
 9"-3.0' - brownish gray silty f-m  
 sand, loose, moist. on 9/12/03

1520 - collect test pit 9 sample 12-14"

TEST PIT 9  
 TP-9 CS-16844 SP-123344

FIELD DATA SHEET on 9/12/03

Location RIVERVIEW PARK Date 9/12/03 51  
 Project / Client LIBBY ASBESTOS / U.S. EPA REGION 8  
 City of Libby AD-000748

TEST PIT #6A RM 9/12/03  
 0-8" - L.S. SANDY GRAVEL, trace  
 SILT, DUNE MOIST. (ROAD BASE)  
RM 9/12/03  
 8-12" - L.V. OBSERVED - NOT  
 ENOUGH TO CALL IT A LENS -  
 JUST L.V. IS PRESENT JUST  
 BELOW THE ROAD BASE. unaffected  
 12-18" - BROWNISH GRAY  
 SILTY F-F SAND, WITH  
 COBBLES + BOUNDERIES, MOIST,  
 COBBLES + BOUNDERIES ARE  
 SUBMITTED TO SUB ANALYSIS

1700 - COLLECT TEST PIT SAMPLE  
 FROM TEST PIT 6A - 36-38"  
 TEST PIT 6A  
 (TP-6A) CS-16846 / SP-123346  
 FIELD DATA SHEET 005737

1715 - LEAVES SITE AFTER INITIAL  
 REPAIR POLY THAT WAS REMOVED IN  
 ORDER TO EXCAVATE TEST PITS. unaffected  
 1720 - CAN LEAVES SITE FOR THE DAY  
RM 9/12/03  
 PARROT UNIT - 9/12/03

Location RIVERVIEW PARK Date 9/12/03  
 Project / Client LIBBY ASBESTOS / U.S. EPA REGION 8  
 City of Libby AD-000748

1530 - ER + CAM EXC. ZONE - WRAP  
 BUCKET TO EXCAVATE IN POLY + MOVE  
 THE EXCAVATOR (BY TRAILER) TO TEST  
 PIT LOCATION #7 RM 9/12/03  
 1535 - BEGIN TEST PIT #7 RM 9/12/03  
 TEST PIT #7 RM 9/12/03  
 0-2" - ASPHALT (PICNIC AREA)  
 2-4" F-F SANDY GRAVEL WITH unaffected  
 SIGNIFICANT L.V. RM 9/12/03  
 BLACK TYPAR FABRIC 0-4"  
 4-8" F-F SANDY GRAY BROWNISH GRAY  
 F-F SAND, WITH F-F GRAVEL, MOIST  
 MOIST [VERY SIGNIFICANT L.V. 4-8"]  
 8"-3.5' BROWNISH GRAY F-F SAND  
 WITH SILT, WITH F-F GRAVEL, WITH  
 COBBLE (GRAVEL) COBBLES SUBMITTED TO  
 SUB ANALYSIS RM 9/12/03

1600 - COLLECT SAMPLE FROM TEST PIT 7 (416")  
 TEST PIT 7  
 (TP-7) CS-16845 / SP-123345  
 FIELD DATA SHEET 005737

1615 - MOBILIZE TO TEST PIT #6A  
 1620 - BEGIN EXCAVATION OF  
 TEST PIT #6A, unaffected  
 PARROT UNIT - 9/12/03

54

Location RIVERSIDE PARK

Date

9/13/83  
9/12/83

Project / Client

LIBBY ADDRESS / U.S. EPA REGION 8CITY OF LIBBYAD-000748

0900. Arrive e RIVERSIDE PARK  
for SOIL sampling of embankment  
along CITY service ROAD BY Highway  
37. GRID OFF sample locations -  
50 FT grids. ROBERT HUNT - DANNY  
ZAMBRANO collect SOIL samples - mudier  
level D-PPE. Soil sample AREAS ARE  
sprayed with water prior to sampling.  
Soil sampling equipment is decontaminated with  
D5 WATER + SCRUB BRUSH BETWEEN samples

1135

EMBANKMENT

CS- 16848

SP- 123347

CE1 FIELD DATA SHEET

0057281140

CE2

CS- 16849

SP- 123348

FIELD DATA SHEET

0057281145

CE3

CS- 16850

SP- 123349

FIELD DATA SHEET

0057281150

CE4

CS- 16851

SP- 123350

FIELD DATA SHEET

005753005723- Robert Hunt 9/13/83- Robert Hunt 9/12/83

Location RIVERSIDE PARK

Date 2/15/03

Project / Client LIBBY ASBESTOS / U.S. EPA Region 8

City of LIBBY

AD-000748

<u>1154</u> E1	CS- 16852	SP- 123350
<u>1340</u> E2	CS- 16853	SP- 123351
<u>1345</u> E3	CS- 16854	SP- 123352
<u>1351</u> E4	CS- 16855	SP- 123353
<u>1356</u> E5	CS- 16856	SP- 123354
<u>1409</u> E6	CS- 16857	SP- 123355

SOILS @ E1, E2, E3, E4, E5, E6, E7, E8. BROWNISH GRAY F-C SAND, WITH  
fine gravel, trace silt, coarse, med.  
All SOIL MATERIALS ON EMBANKMENT  
CONSISTED OF F-C SAND WITH  
fine gravel, trace silt, trace cobble.

Robert Hunt - 9/18/03

56 Location RIVERSIDE PARK Date 9/13/03  
Project / Client LIBBY ASBESTOS / U.S. EPA REGION 8  
CITY OF LIBBY AD-0001748

\* NO L.V. OBSERVED IN EMBANKMENT  
along CITY SERVICE ROAD - FACING  
KOOTENAI RIVER. 9/13/03

1420 - Move TO THE OPPOSITE OF THE  
EMBANKMENT - RUNNING ALONG CITY SERVICE

+ MARK OFF GRID LOCATIONS - 50 ft Grid

(1501) SP-123356

E10

CS-16858

FIELD DATA SHEET 005755

(1508)

E11

CS-16859 SP-123357

FIELD DATA SHEET

005755

(1514)

E12

CS-16860

SP-123358

FIELD DATA SHEET

005755

(1521)

E13

CS-16861

SP-123359

FIELD DATA SHEET

005756

(1526)

E14

CS-16862

SP-123360

FIELD DATA SHEET

005756

\* L.V. OBSERVED ACROSS EMBANKMENT  
SOUTHWEST OF CITY SERVICE ROAD  
L.V. seems TO BE CONCENTRATED  
- 2 - PERMIT HUNT - 9/13/03

in 9/6/03  
Location RIVERSIDE PARK Date 9/13/03 57

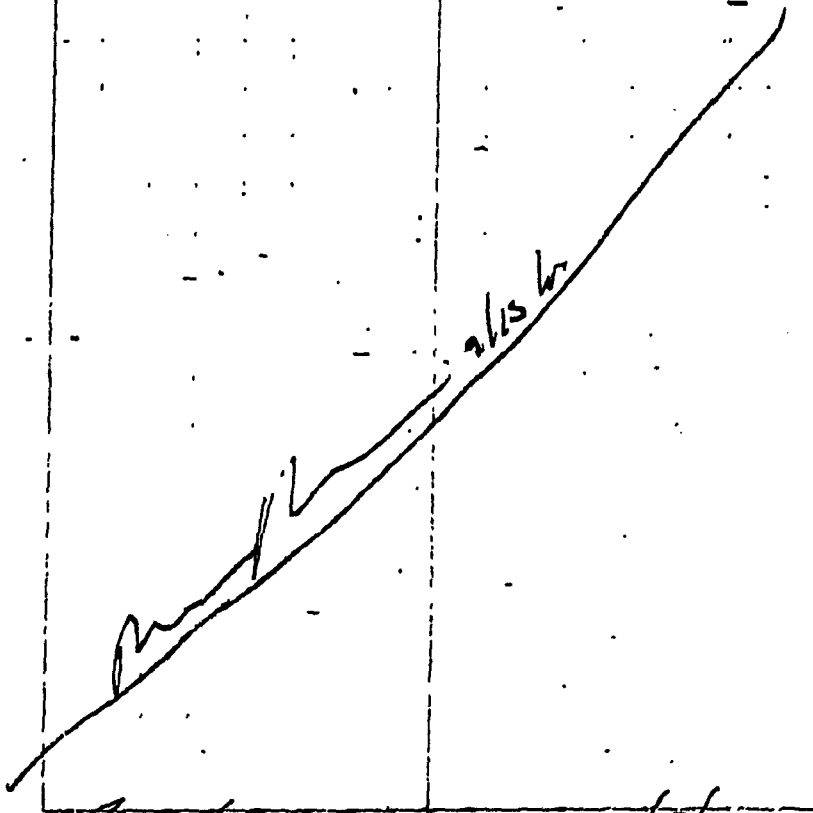
Project / Client LIBBY KREBS / U.S. EPA REGION 8

City of Libby

AD-660748

@ BASE OF EMBALEMENT. TRACE -  
MODERATE AMOUNTS. MATERIALS WORKS  
SIMILAR TO SOIL ON THE NE SIDE  
OF CITY SERVICE ROAD - FINE SAND  
WITH F. GRAVEL, TRACE SILT, TRACE COBBLE,  
LOOSE, MOUNT.

1535 - FINISHED @ RIVERSIDE PARK



— ROBERT HUNT - 9/12/03 —

# Appendix C

## Riverside Park Field Sample Data Sheets

Sheet No.: P1-S-001200

**PHASE 1 INVESTIGATION  
LIBBY, MONTANA FIELD SAMPLE DATA SHEET  
SOIL-LIKE MATERIALS**

City Service Rd - Boat Ramp Area

Scenario No.: NA Field Logbook No: 00210 Page No: 5-C Sampling Date: 5/22/03  
 Address: ~~Highway 87 in Bridge Falls~~ Owner/Tenant: CITY OF LIBBY  
 Business Name: CITY OF LIBBY - WINTERGAT PARK 5/28/03  
 Land Use: Residential School Commercial Mining Roadway Other (RECREATIONAL - PARK)  
 Sampling Team: CDM MACTEC Other \_\_\_\_\_ Name(s): ROBERT HUNT  
DAE MURKOFF

Data Item	Sample 1	Sample 2	Sample 3
Index ID	1-07851	1-07852	1-07853
Location ID	SP- 121240	SP- 121241	SP- 121242
Sample Group	paper by	paper by	paper by
Location Description	ON Ramp → CONCRETE PAD AREA CLOSEST TO RIVER	ON Ramp → MIDDLE → Asphalt AREA	ON Ramp TOP - Asphalt AREA
Category (circle)	<u>FS</u> FD	<u>FS</u> FD	<u>FS</u> FD
Matrix Type (circle)	Mining Waste Subsurface Soil <u>Surface Soil</u> Fill Other	Mining Waste Subsurface Soil <u>Surface Soil</u> Fill Other	Mining Waste Subsurface Soil <u>Surface Soil</u> Fill Other
Type (circle)	Grab <u>Comp. # subsamples 5</u>	Grab <u>Comp. # subsamples 5</u>	Grab <u>Comp. # subsamples 5</u>
Sample Time	1105	1115	1125
Top Depth (in.)	0	0	0
Bottom Depth (in.)	1	1	1
Map Location	R <sub>1</sub>	R <sub>2</sub>	R <sub>3</sub>
Field Comments	Ramp - CONCRETE PAD CLOSEST TO RIVER  see sketch VISIBLE VERMICULITE	Ramp - MIDDLE Asphalt Drive area  see sketch VISIBLE VERMICULITE	Ramp - TOP Asphalt Drive  see sketch VISIBLE VERMICULITE
QC (Field Team) <u>DM</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

Sheet No.: P1-S- 001211

# **PHASE 1 INVESTIGATION** **LIBBY, MONTANA FIELD SAMPLE DATA SHEET** **SOIL-LIKE MATERIALS**

Scenario No.: NA Field Logbook No: 108247 Page No: 17 Sampling Date: 07/19/03  
 Address: Boat Ramp (Kootenai, Hwy 376 bridge) Owner/Tenant: Libby  
 Business Name: NA  
 Land Use: Residential School Commercial Mining Roadway Other (Town)  
 Sampling Team: CDM MACTEC Other D1 Name(s): Paul Open, Angela Rasses,  
6/19/03 D2 6/12/03 Fring Hsu

Data Item	<sup>PO</sup> Sample 1	<sup>PO</sup> Sample 2	Sample 3
Index ID	1-07731 ✓	1-07732 ✓	
Location ID	<b>SP- 121164</b>	<b>SP- 121165</b>	
Sample Group	<u>Yard</u>	<u>Yard</u>	
Location Description	<u>N &amp; S edges of concrete pad (refer to diagram)</u>	<u>E of concrete pad (refer to diagram)</u>	<u>6/12/03</u> <u>PO</u>
Category (circle)	<u>FS</u> FD	<u>FS</u> FD	FS FD
Matrix Type (circle)	Mining Waste Subsurface Soil <u>Surface Soil</u> Fill Other	Mining Waste Subsurface Soil <u>Surface Soil</u> Fill Other	Mining Waste Subsurface Soil Surface Soil Fill Other
Type (circle)	Grab <u>Comp. # subsamples 5</u>	Grab <u>Comp. # subsamples 5</u>	Grab Comp. # subsamples
Sample Time	<u>1018</u>	<u>1022</u>	
Top Depth (in.)	<u>0</u>	<u>0</u>	
Bottom Depth (in.)	<u>6</u>	<u>6</u>	
Map Location	<u>D1</u>	<u>D2</u>	
Field Comments	<u>Vermiculite noticed in sample</u>	<u>Vermiculite noticed in sample</u>	
QC (Field Team)	Volpe: Entered <u>25</u> Validated	Volpe: Entered Validated	Volpe: Entered Validated

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 22-23 Sampling Date: 9/9/03

Address: Riverside PARK Owner/Tenant: CITY OF LIBBY

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other (PARK)

Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: DANNY ZAMBENO  
ROBERT HUNT

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 16689</u>	<u>CS- 16690</u>	<u>CS- 16691</u>
Location ID	<u>SP- 123159</u>	<u>SP- 123159</u>	<u>SP- 123160</u>
Sample Group	<u>PARK (SS4) <sup>SS4</sup></u>	<u>PARK (SS4 - Dup)</u>	<u>PARK (SS5)</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area SS4</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area SS4</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area SS5</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of <u>CS-16689</u> Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	Grab <u>Comp. # subsamples</u> <u>54</u>	Grab <u>Comp. # subsamples</u> <u>54</u>	Grab <u>Comp. # subsamples</u> <u>5</u>
Sample Time	<u>1538</u>	<u>1547</u>	<u>1558</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>6</u>	<u>6</u>	<u>6</u>
Field Comments Note if vermiculite is visible in sampled area	<u>AD000748</u> Samples collected center point, 25' S, 25' E, + 25' W  L.V. OBSERVED IN NORTH SECTION - NO SUB SAMPLE COLLECTED	<u>AD000748</u> Samples collected center point, 25' S, 25' E, + 25' W  L.V. OBSERVED IN NORTH SECTION - NO SUB SAMPLE COLLECTED	<u>AD000748</u> Samples collected center, 25' S, 25' N, 25' E, + 25' W  NO L.V. OBSERVED
Entered (LFO) <u>fs</u>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by PH

QC by D.2

DW  
9.9.03

Sheet No.: CSS-S- 005726

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 24 Sampling Date: 9/9/03  
 Address: RIVERSIDE PARK ~~Owner~~ Tenant: CITY OF LIBBY  
 Business Name: \_\_\_\_\_  
 Land Use: (circle) Residential School Commercial Mining Roadway Other (PARK)  
 Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: DANNY ZAMBRANO  
ROBERT HUNT

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 16692</u>	<u>CS- 16693</u>	<u>CS- 16694</u>
Location ID	<u>SP-123161</u> <del>CD-123161</del>	<u>SP- 123162</u>	<u>SP- 123163</u>
Sample Group	<u>PARK (SS6)</u>	<u>PARK (SS7)</u>	<u>PARK (RS2)</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other Area SS6</u>	Back yard Front yard Side yard Driveway <u>Other Area SS7</u>	Back yard Front yard Side yard Driveway <u>Other Area RS2</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	Grab <u>Comp. # subsamples 5</u>	Grab <u>Comp. # subsamples 5</u>	Grab <u>Comp. # subsamples 5</u>
Sample Time	<u>1602</u>	<u>1609</u>	<u>1619</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>6</u>	<u>6</u>	<u>6</u>
Field Comments Note if vermiculite is visible in sampled area	<u>BD-AD 000748</u> Samples collected @ center, 25' N, 25' S, 25' E - 25' W <u>NO L.V. OBSERVED</u>	<u>BD-AD 000748</u> Samples collected @ center 25' N, 25' S, 25' E, 25' W <u>NO L.V. OBSERVED</u>	<u>BD-AD 000748</u> Samples collected @ center, 10' N, 10' S, 10' E + 10' W - ON SLOPE <u>NO L.V. OBSERVED</u>
Entered (LFO) <u>PS</u>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

 For Field Team Completion  
(Provide Initials)
Completed by PMQC by DZ
 DW  
9.9.03

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 24 Sampling Date: 9/9/03

Address: RIVERSIDE PARK Owner/Tenant: CITY OF LIBBY

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other ( PARK )

Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: DANNY ZAMBRANO

ROBERT HUNT

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 16695</u>	<u>CS- 16696</u>	
Location ID	<u>SP- 123317</u>	<u>SP- 123318</u>	
Sample Group	<u>PARK (RSS)</u>	<u>PARK (RSL)</u>	
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other Area RSS</u>	Back yard Front yard Side yard Driveway <u>Other Area RSL</u>	Back yard Front yard Side yard Driveway Other
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	FS FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	Surface Soil Other _____
Type (circle)	Grab <u>Comp. # subsamples 5</u>	Grab <u>Comp. # subsamples 5</u>	Grab Comp. # subsamples _____
Sample Time	<u>1637</u>	<u>1642</u>	
Top Depth (in.)	<u>0</u>	<u>0</u>	
Bottom Depth (in.)	<u>6</u>	<u>6</u>	
Field Comments Note if vermiculite is visible in sampled area	<u>NO L.V. OBSERVED</u> <u>SAMPLES COLLECTED @ CENTER, 10' N, 10' S, 10' E, 10' W</u>	<u>NO L.V. OBSERVED</u> <u>SAMPLES COLLECTED @ CENTER, 10' N, 10' S, 10' E, 10' W</u>	BD- _____
Entered (LFO) <u>PS</u>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by RH

QC by DZ

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 54-55 Sampling Date: 9/13/03

Address: RIVERSIDE PARK Owner/Tenant: CITY OF LIBBY

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other (PARK)

Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: DANNY ZAMBANO/ROBERT HUNT

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<b>CS- 16848</b>	<b>CS- 16849</b>	<b>CS- 16850</b>
Location ID	<b>SP- 123347</b>	<b>SP- 123348</b> <b>CD- 123348</b>	<b>SP- 123349</b>
Sample Group	<u>PARK (E-1)</u>	<u>PARK (E2)</u>	<u>PARK (E3)</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area E1</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area E2</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area E3</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> <u>Other</u> <u>SLURRY/FALE</u>	<u>Surface Soil</u> <u>Other</u> _____	<u>Surface Soil</u> <u>Other</u> _____
Type (circle)	Grab <u>Comp. # subsamples</u> <u>5</u>	Grab <u>Comp. # subsamples</u> <u>5</u>	Grab <u>Comp. # subsamples</u> <u>5</u>
Sample Time	<u>1135</u>	<u>1140</u>	<u>1145</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>6</u>	<u>6</u>	<u>6</u>
Field Comments Note if vermiculite is visible in sampled area	<del>BD- AD- 000748</del> <u>NO L.V.</u> <u>OBSERVED</u>	<del>BD- AD- 000748</del> <u>NO L.V.</u> <u>OBSERVED</u>	<del>BD- 000748</del> <u>NO L.V.</u> <u>OBSERVED</u>
Entered (LFO) <u>PH</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by D.Z

QC by PH

DW  
9.13.03

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 06275 Page No: 27/28 Sampling Date: 9/10/03

Address: RIVERSIDE PARK Owner/Tenant: CITY OF LIBBY

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other (PARK)

Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: DANNY ZAMBRANO  
ROBERT HUNT

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 16698</u> ✓	<u>CS- 16699</u> ✓	<u>CS- 16700</u> ✓
Location ID	<u>SP- 123319</u>	<u>SP- 123320</u>	<u>SP- 123321</u>
Sample Group	<u>PARK (TP<sub>1</sub>)</u>	<u>PARK (TP<sub>2</sub>)</u>	<u>PARK (TP<sub>3</sub>)</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other Area TP<sub>1</sub></u>	Back yard Front yard Side yard Driveway <u>Other Area TP<sub>2</sub></u>	Back yard Front yard Side yard Driveway <u>Other Area TP<sub>3</sub></u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> <u>DZ 9/14/03</u> <u>Other Subsurface</u>	<u>Surface Soil</u> <u>Other Subsurface</u>	<u>Surface Soil</u> <u>Other Subsurface</u>
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>1010</u>	<u>1035</u>	<u>1100</u>
Top Depth (in.)	<u>029/10/03 36"</u>	<u>029/10/03 36"</u>	<u>14"</u>
Bottom Depth (in.)	<u>029/10/03 38"</u>	<u>029/10/03 39"</u>	<u>16"</u>
Field Comments Note if vermiculite is visible in sampled area	BD: <u>AD-000748</u> <u>LIV</u> <u>NO VERMICULITE IN #1</u> <u>TEST PIT</u>	BD: <u>AD-000748</u> <u>LIV</u> <u>NO VERMICULITE IN #2</u> <u>TEST PIT</u>	BD: <u>AD-000748</u> <u>LIV</u> <u>NO VERMICULITE OBSERVED IN SAMPLE</u>
Entered (LFO)	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by DZ

QC by RM

Sheet No.: CSS-S- 005730

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 27/28 Sampling Date: 9/10/03Address: RIVERSIDE PARK Owner/Tenant: City of Libby

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other (PARK)Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: ROBERT HUNT / DANNY ZAWIL

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 16821</u>		
Location ID	<u>SP- 123322</u>		
Sample Group	<u>PARK (TP 4)</u>	<u>PARK (TP 4)</u>	
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other (AREA TP 4)</u>	Back yard Front yard Side yard Driveway <u>Other (AREA TP 4)</u>	Back yard Front yard Side yard Driveway <u>Other</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> <u>Other (SUBSURFACE)</u>	<u>Surface Soil</u> <u>Other (SUBSURFACE)</u>	<u>Surface Soil</u> <u>Other</u>
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>1125</u>		
Top Depth (in.)	<u>36"</u>		
Bottom Depth (in.)	<u>38"</u>		
Field Comments Note if vermiculite is visible in sampled area	<u>BD- AD000748</u> <u>NO L.V.</u> <u>OBSERVED</u>	<u>BD- AD000748</u>	<u>BD-</u>
Entered (LFO) <u>js</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)Completed by RMQC by D.ZDw  
9/10/03

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 43-51 Sampling Date: 9/12/03

Address: RIVERSIDE PARK Owner/Tenant: CITY OF LIBBY

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other (PARK)

Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: ROBERT HUNT / DANNY ZIMBRANO

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 16835</u> ✓	<u>CS- 16836</u> ✓	<u>CS- 16837</u> ✓
Location ID	<u>SP- 123336</u>	<u>SP- 123337</u>	<u>SP- 123338</u>
Sample Group	<u>PARK (TP4)</u>	<u>PARK (TP4-H)</u>	<u>PARK (TP5)</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other (TP4)</u>	Back yard Front yard Side yard Driveway <u>Other (TP4-H)</u>	Back yard Front yard Side yard Driveway <u>Other (TP5)</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other is noted)	Surface Soil <u>Other SUBSURFACE</u>	Surface Soil <u>Other SUBSURFACE</u>	Surface Soil <u>Other SUBSURFACE</u>
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>125 0925</u>	<u>1110</u>	<u>1010</u>
Top Depth (in.)	<u>36"</u>	<u>36"</u>	<u>12"</u>
Bottom Depth (in.)	<u>38"</u>	<u>38"</u>	<u>18"</u>
Field Comments Note if vermiculite is visible in sampled area	<u>BD-AD000748</u> <u>NO LV</u> <u>in sample</u>	<u>BD-AD000748</u> <u>NO LV in</u> <u>sample</u>	<u>BD-AD000748</u> <u>NO LV in</u> <u>sample</u>
Entered (LFO) <u>PS</u>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by D.Z

QC by RH

09.12.03

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 4351 Sampling Date: 9/12/03

Address: Riverside Park Owner/Tenant: City of Libby

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other (PARK)

Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: ROBERT HEAT / DANNY ZIMMANO

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<b>CS- 16838</b>	<b>CS- 16839</b>	<b>CS- 16840</b>
Location ID	<b>SP- 123339</b>	<b>SP- 123340</b>	<b>SP- 123340</b>
Sample Group	<b>PARK TP-8</b>	<b>PARK TP-6</b>	<b>PARK TP-6 DUP</b>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other TP-8</u>	Back yard Front yard Side yard Driveway <u>Other TP-6</u>	Back yard Front yard Side yard Driveway <u>Other TP-6 DUP</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of <u>CS-16839</u> Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	Surface Soil <u>Other SUBSURFACE</u>	Surface Soil <u>Other SUBSURFACE</u>	Surface Soil <u>Other SUBSURFACE</u>
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>1035</u>	<u>1145</u>	<u>1150</u>
Top Depth (in.)	<u>36"</u>	<u>36"</u>	<u>36"</u>
Bottom Depth (in.)	<u>38"</u>	<u>38"</u>	<u>38"</u>
Field Comments Note if varmiculite is visible in sampled area	<del>BD- AD000748</del> <b>NO LV. IN SAMPLE</b>	<del>BD- AD000748</del> <b>NO LV. OBSERVED IN SAMPLE</b>	<del>BD- AD000748</del> <b>NO LV. OBSERVED IN SAMPLE</b>
Entered (LFO) <u>JS</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by D. Z

QC by RY

DW  
9.12.03

Sheet No.: CSS-S- **005736**

# **CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL**

Scenario No.: NA Field Logbook No: 100275 Page No: 43-51 Sampling Date: 9/12/03

Address: RIVER SIDE PARK Owner Tenant: CITY OF LEBBY

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other PARK

Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: ROBERT HUNT / DANNY ZAMBRANO

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<b>CS- 16841</b>	<b>CS- 16842</b>	<b>CS- 16843</b>
Location ID	<b>SP- 123341</b>	<b>SP- 123342</b>	<b>SP- 123343</b>
Sample Group	<b>PARK (TP 11)</b>	<b>PARK (TP 1A)</b>	<b>PARK (TP 10)</b>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u>	Back yard Front yard Side yard Driveway <u>Other</u>	Back yard Front yard Side yard Driveway <u>Other</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	Surface Soil <u>Other</u> <u>SUBSURFACE</u>	Surface Soil <u>Other</u> <u>SUBSURFACE</u>	Surface Soil <u>Other</u> <u>SUBSURFACE</u>
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>1430</u>	<u>1435</u>	<u>1500</u>
Top Depth (in.)	<u>36"</u>	<u>36"</u>	<u>36"</u>
Bottom Depth (in.)	<u>38"</u>	<u>38"</u>	<u>38"</u>
Field Comments Note if vermiculite is visible in sampled area	<u>AD 000748</u> <u>NO LV</u> <u>IN SAMPLE</u>	<u>AD 000748</u> <u>NO</u> <u>LV IN SAMPLE</u>	<u>AD 000748</u> <u>NO LV</u> <u>IN SAMPLE</u>
Entered (LFO) <u>PS</u>	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____	Volpe: _____ Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by D. Z QC by R. Y

DW  
9.12.03

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 43-51 Sampling Date: 9/12/03

Address: RIVERSIDE PARK Owner/Tenant: CITY OF LIBBY

Business Name: \_\_\_\_\_

Land Use; (circle) Residential School Commercial Mining Roadway Other PARK

Sampling Team; (circle) CDM MACTEC Other \_\_\_\_\_ Names: ROBERT HUNT / DANNY ZAMBINO

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<b>CS- 16844</b>	<b>CS- 16845</b>	<b>CS- 16846</b>
Location ID	<b>SP- 123344</b>	<b>SP- 123345</b>	<b>SP- 123346</b>
Sample Group	<u>PARK CTP 91</u>	<u>PARK CTP 71</u>	<u>PARK CTP 6A1</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u>	Back yard Front yard Side yard Driveway <u>Other</u>	Back yard Front yard Side yard Driveway <u>Other</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	Surface Soil <u>Other</u> <u>SUBSURFACE SOIL</u>	Surface Soil <u>Other</u> <u>SUBSURFACE SOIL</u>	Surface Soil <u>Other</u> <u>SUBSURFACE SOIL</u>
Type (circle)	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____	<u>Grab</u> Comp. # subsamples _____
Sample Time	<u>1520</u>	<u>1608</u>	<u>1700</u>
Top Depth (in.)	<u>12"</u>	<u>14"</u>	<u>36"</u>
Bottom Depth (in.)	<u>14"</u>	<u>16"</u>	<u>38"</u>
Field Comments Note if vermiculite is visible in sampled area	<u>AD 000748</u> <u>NO LV</u> <u>IN SAMPLE</u>	<u>AD 000748</u> <u>NO LV</u> <u>IN SAMPLE</u>	<u>AD 000748</u> <u>NO LV</u> <u>IN SAMPLE</u>
Entered (LFO) <u>ps</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by RM

QC by RM

DW  
9/12/03

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 12-23 Sampling Date: 9/9/03

Address: RIVERSIDE PARK Owner/Tenant: CITY OF LIBBY

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other ( PARK )

Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: DANNY ZAMBEANO  
ROBERT HUNT

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 16686</u> ✓	<u>CS- 16687</u> ✓	<u>CS- 16688</u> ✓
Location ID	<u>SP- 123156</u>	<u>SP- 123157</u>	<u>SP- 123158</u>
Sample Group	<u>PARK (RS) in 163</u>	<u>PARK (RS) in 163</u>	<u>PARK (RS) in 163</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area SS1</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area SS2</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area SS3</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	<u>Grab</u> <u>Comp. # subsamples 5</u>	<u>Grab</u> <u>Comp. # subsamples 5</u>	<u>Grab</u> <u>Comp. # subsamples 5</u>
Sample Time	<u>1450</u>	<u>1506</u>	<u>1519</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>6</u>	<u>6</u>	<u>6</u>
Field Comments Note if vermiculite is visible in sampled area.	<u>AD 000748</u> on 9/9/03 Sub samples collected @ - center point - - 25' N - 25' W - 25' E No L.V. observed	<u>AD 000748</u> Sub samples collected @ E - center, 25' N, 25' S, 25' E, & 25' W. NO L.V. OBSERVED IN SAMPLE	<u>AD 000748</u> Sub samples collected @ E - center, 25' N, 25' S, 25' E, & 25' W. TRACE L.V. OBSERVED IN VICINITY OF East sub sample
Entered (LFO) <u>PS</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by RH

QC by DZ

DD  
9.9.03

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 5455 Sampling Date: 9/13/03

Address: River Side Park Owner/Tenant: City of Liberty

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other PARK

Sampling Team: (circle) QDM MACTEC Other \_\_\_\_\_ Names: ROBERT HUNT / DANNY ZAMBRANO

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<b>CS- 16851</b> ✓	<b>CS- 16852</b> ✓	<b>CS- 16853</b> ✓
Location ID	<b>SP- 123350</b> ✓	<b>SP- 123350</b> ✓	<b>SP- 123351</b> ✓
Sample Group	<u>PARK (E4)</u>	<u>PARK (DUP - E4)</u>	<u>PARK (E5)</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area A E4</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area E4</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area A E5</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil) unless other wise noted	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	Grab <u>Comp. # subsamples 5</u>	Grab <u>Comp. # subsamples 5</u>	Grab <u>Comp. # subsamples 5</u>
Sample Time	<u>1150</u>	<u>1154</u>	<u>1340</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>6</u>	<u>6</u>	<u>6</u>
Field Comments Note if vermiculite is visible in sampled area	<u>BD- AD 000748</u> <u>NO L.V.</u> <u>OBSERVED</u>	<u>BD- AD 000748</u> <u>NO L.V.</u> <u>OBSERVED</u>	<u>BD- AD 000748</u> <u>NO L.V.</u> <u>OBSERVED</u>
Entered (LFO) <u>PS</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by DZ

QC by BM

DW  
9.13.03

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 54-55 Sampling Date: 9/13/03

Address: RIVERSIDE PARK Owner/Tenant: city of Libby

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other (PARK)

Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: DANNY ZAMBALLO  
ROBERT HUNT

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<b>CS- 16854</b>	<b>CS- 16855</b>	<b>CS- 16856</b>
Location ID	<b>SP- 123352</b>	<b>SP- 123353</b>	<b>SP- 123354</b>
Sample Group	<u>PARK (E6)</u>	<u>PARK (E7)</u>	<u>PARK (E8)</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area E6</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area E7</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area E8</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> <u>Other</u> <u>SSB-D29/13/03</u>	<u>Surface Soil</u> <u>Other</u> _____	<u>Surface Soil</u> <u>Other</u> _____
Type (circle)	Grab <u>Comp. # subsamples</u> <u>5</u>	Grab <u>Comp. # subsamples</u> <u>5</u>	Grab <u>Comp. # subsamples</u> <u>5</u>
Sample Time	<u>1345</u>	<u>1351</u>	<u>1356</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>6</u>	<u>6</u>	<u>6</u>
Field Comments Note if vermiculite is visible in sampled area	<u>BD-AD 000748</u> <u>NO L.V.</u> <u>OBSERVED</u>	<u>BD-AD 000748</u> <u>NO L.V.</u> <u>OBSERVED</u>	<u>BD-AD</u> <u>NO L.V.</u> <u>OBSERVED</u>
Entered (LFO) <u>RS</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by DZ

QC by RY

DW  
9.13.03

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 100275 Page No: 54-55 Sampling Date: 9/13/03

Address: RIVERSIDE PARK Owner/Tenant: CITY OF LIBBY

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other PARK

Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: ROBERT HUNT  
DANNY CAMBIANO

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 16857</u>	<u>CS- 16858</u>	<u>CS- 16859</u>
Location ID	<u>SP- 123355</u>	<u>SP- 123356</u>	<u>SP- 123357</u>
Sample Group	<u>DARK (E9)</u>	<u>DARK (E10)</u>	<u>PARK (E11)</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area E9</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area E10</u>	Back yard Front yard Side yard Driveway <u>Other</u> <u>Area E11</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	Grab <u>Comp. # subsamples</u> <u>5</u>	Grab <u>Comp. # subsamples</u> <u>5</u>	Grab <u>Comp. # subsamples</u> <u>5</u>
Sample Time	<u>1464</u>	<u>1501</u>	<u>1508</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>6</u>	<u>6</u>	<u>6</u>
Field Comments Note if vermiculite is visible in sampled area	<u>BD AD-000748</u> <u>NO L.V.</u> <u>OBSERVED IN SAMPLE</u>	<u>BD AD-000748</u> <u>MODERATE L.V.</u> <u>OBSERVED</u>	<u>BD AD-000748</u> <u>MODERATE L.V.</u> <u>OBSERVED</u>
Entered (LFO) <u>DS</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by DZ

QC by RM

OW  
9.13.03

# CONTAMINANT SCREENING STUDY/REMEDIAL INVESTIGATION FIELD SAMPLE DATA SHEET (FSDS) FOR SOIL

Scenario No.: NA Field Logbook No: 10275 Page No: 56 Sampling Date: 9/13/03

Address: RIVERSIDE PARK Owner/Tenant: CITY OF LIBBY

Business Name: \_\_\_\_\_

Land Use: (circle) Residential School Commercial Mining Roadway Other (PARK)

Sampling Team: (circle) CDM MACTEC Other \_\_\_\_\_ Names: ROBERT HUNT / Doreen Zambrano

Data Item	Sample 1	Sample 2	Sample 3
Index ID	<u>CS- 16860</u> ✓	<u>CS- 16861</u> ✓	<u>CS- 16862</u> ✓
Location ID	<u>SP- 123358</u>	<u>SP- 123359</u>	<u>SP- 123360</u>
Sample Group	<u>PARK (E12)</u>	<u>PARK (E13)</u>	<u>PARK (E14)</u>
Location Description (circle)	Back yard Front yard Side yard Driveway <u>Other Area E12</u>	Back yard Front yard Side yard Driveway <u>Other Area E13</u>	Back yard Front yard Side yard Driveway <u>Other Area E14</u>
Category (circle)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)	<u>FS</u> FD of _____ Field Blank (lot or equipment)
Matrix Type (Surface soil unless other wise noted)	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____	<u>Surface Soil</u> Other _____
Type (circle)	Grab <u>Comp. # subsamples 5</u>	Grab <u>Comp. # subsamples 5</u>	Grab <u>Comp. # subsamples 5</u>
Sample Time	<u>1514</u>	<u>1521</u>	<u>1526</u>
Top Depth (in.)	<u>0</u>	<u>0</u>	<u>0</u>
Bottom Depth (in.)	<u>6</u>	<u>6</u>	<u>6</u>
Field Comments Note if vermiculite is visible in sampled area	<u>AD-000748</u> <u>TRACE - L.V.</u> <u>L.V. OBSERVED</u>	<u>AD-000748</u> <u>TRACE L.V.</u> <u>OBSERVED</u>	<u>AD-000748</u> <u>NO LV IN</u> <u>SAMPLE</u>
Entered (LFO) <u>ps</u>	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____	Volpe: Entered _____ Validated _____

For Field Team Completion  
(Provide Initials)

Completed by DZ

QC by RY

# Appendix D

## Riverside Park Laboratory Bench Sheets

**CDM**

Hard copy data was not received at the time of this document production. Data will be provided at a later date.